UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XA015NM

Site Name: Shallow Shale

Precipitation or Climate Zone: 14 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on gently sloping to rolling uplands. Elevation ranges from 5,800 to 7,200 feet above sea level. It consists of shallow soils formed on shale and fans derived from eroding shale. Slopes range from 5 to 15 percent on all aspects. Aspect is not significant.

Land Form:

1. Plain
2. Fan
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	5,800	7,200
Slope (percent)	5	15
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of this area can be classified as "semi-arid continental".

Precipitation averages 14 to 16 inches. Seventy seven percent of the year's moisture normally falls during the period of May through October. Practically all of it is brought by brief afternoon and evening thunderstorms. In July and August, normally the wettest months of the year, one can expect about one day in five when rainfall exceeds one-tenth inch. Early spring precipitation in May benefits the cool-season plants. Winter precipitation, supplying 24 percent of the year's moisture, normally has no more than two days a month with as much as one-tenth inch of moisture. Much of the winter precipitation falls as snow.

Air temperatures vary from a monthly mean of 20 degrees F in January to 69 degrees F in July. Daily high temperatures average in the 80's and low 90's during the summer. Winter low temperatures fall below the freezing mark much of the time from November through March with minimum temperatures approaching 25 degrees F below zero. Dates of the last killing frost may vary from May 9th through May 17th, and the first killing frost from September 27th to October 8th. The frost-free season ranges from 141 days to 153 days from early May to early October.

Wind velocities for the area average 10 to 12 miles per hour and prevail from the south and southwest. Generally, March is the windiest month. Strong winds during the spring cause rapid drying of the soil surface.

Nearby mountains to the west intercept much of the precipitation from the Pacific storms coming through this area during the winter. About 70 percent of the 14 to 16 inches of annual precipitation falls in the form of rainfall during the frost-free season. About 40 percent of the annual precipitation benefits cool-season plants, 50 percent benefits warm-season plants and 10 percent falls during the season of plant dormancy. Relative humidity is moderately low. The sun shines approximately 75 percent of the time.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	132	149
Freeze-free period (days):	153	171
Mean annual precipitation (inches):	14	16

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.27	.40	10.4	48.2
February	.26	.43	14.1	52.7
March	.56	.78	20.4	59.6
April	.85	1.20	28.7	67.9
May	1.68	2.49	38.3	76.4
June	1.77	2.21	46.3	85.7
July	2.53	3.43	50.9	88.8
August	2.95	3.57	50.6	86.6
September	1.56	2.02	42.9	80.7
October	1.02	1.20	31.4	71.4
November	.44	.59	19.9	57.6
December	.25	.51	12.3	50.5

Climate Stations:

				Period		
Station ID	293706	Location	Grenville, NM	From: 01/01/41	To:	12/31/01
Station ID	294856	Location	Las Vegas FAA Airport, NM	From: 01/01/41	To:	12/31/01
Station ID	295490	Location	Maxwell, NM	From: 01/01/14	To:	12/31/01
Station ID	297280	Location	Raton KRTN Radio, NM	From: 12/01/78	To:	12/31/01
Station ID	298501	Location	Springer, NM	From: 01/01/14	To:	12/31/01
Station ID	299330	Location	Valmora, NM	From: 03/01/17	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils on this site are well drained and are very shallow and shallow. The surface layer is clay loam, and silty clay loam. The subsurface layer is clay. Permeability is slow. The available water-holding capacity is low. Effective rooting depth is 7 to 20 inches. Because of the slow permeability, the air-water relationship is not optimum for plant growth.

Parent Material Kind: Marine deposits
Parent Material Origin: Shale–unspecified

Surface Texture:

1. Clay loam
2. Silty clay loam
3. Flaggy silty clay loam

Surface Texture Modifier:

1. Flag
2.
3.

Subsurface Texture Group: Clayey
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments <=3" (%Volume): 15 to 35
Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Impermeable	Slow
Depth (inches):	<10	20
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	7.4	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	3	6
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This is a plant community that is dominated by mid-grasses, with scattered woody species making up an important part of the plant community. Perennial and annual forbs are evenly distributed and make up a minor part of the plant community. Blue grama, alkali sacaton and western wheatgrass are the most abundant species.

Canopy Cover:	
Trees	0 – 2 %
Shrubs and half shrubs	12 – 15 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	30 – 35
Bare ground	40 – 45
Surface gravel	0 – 2
Surface cobble and stone	0
Litter (percent)	10 – 15
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	438	694	949
Forb	48	76	104
Tree/Shrub/Vine	78	124	169
Lichen			
Moss			
Microbiotic Crusts			
Total	600	950	1,300

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOGR2	Blue Grama	190 – 238	190 – 238
2	SPAI	Alkali Sacaton	143 – 190	143 – 190
3	PASM	Western Wheatgrass	143 – 190	143 – 190
4	PAOB	Vine-mesquite	48 – 95	48 – 95
5	PLJA	Galleta	48 – 95	48 – 95
6	BOCU	Sideoats Grama	48 – 95	48 – 95
7	BUDA	Buffalograss	29 – 48	29 – 48
8	MUCU3	Plains Muhly	29 – 48	29 – 48
9	MUWR	Spike Muhly	29 – 48	29 – 48
10	ARIST	Threeawn spp.	29 – 48	29 – 48
11	MUTO2	Ring Muhly	29 – 48	29 – 48
12	2GRAM	Other Grasses	29 – 48	29 – 48

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
13	AMPS	Western Ragweed	29 – 48	29 – 48
14	SPHAE	Globemallow spp.	29 – 48	29 – 48
15	2FP 2FA	Other Perennial Forbs Other Annual Forbs	29 – 48	29 – 48

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
16	ATCA2	Fourwing Saltbush	48 – 95	48 – 95
17	KRLA2	Winterfat	29 – 48	29 – 48
18	QUERC	Oak spp.	19 – 48	19 – 48
19	2SD	Other Shrubs	29 – 48	29 – 48

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear include: mat muhly and bottlebrush squirreltail.
Other shrubs that could appear include: cholla cactus, plains pricklypear cactus, juniper spp., pale wolfberry, yucca spp. and fringed sagewort.
Other forbs that could appear include: Wright eriogonum, locoweed spp. and wild buckwheat.

Plant Growth Curves

Growth Curve ID **3715NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Mid-grasses grassland with a major shrub component and a minor forbs component.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats which support a resident animal community that is characterized by mule deer, coyote, desert cottontail, thirteen-lined ground squirrel, marsh hawk, scaled quail, roadrunner, western racer and toad.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Mion	D

Recreational Uses:

This site has good aesthetic appeal and natural beauty. It is fair for screening, camping, hiking and picnicking. Hunting is fair for deer and rabbits and fair winter range for deer.

Wood Products:

This site produces no significant wood production except limited wood from juniper for firewood.

Other Products:

Grazing:

This site can be used any season of the year by all classes of grazing animals. Approximately 80 percent of the total annual yield are from species that furnish forage for grazing or browsing. A variety of grasses, shrubs and forbs provide good nutrition to grazing and browsing animals. Continuous grazing during the growing season will cause the more desirable forage plants such as western wheatgrass, vine-mesquite, sideoats grama, alkali sacaton, fourwing saltbush and winterfat to decrease. Species most likely to invade are sleepygrass and broom snakeweed. Species most likely to increase are blue grama, galleta, buffalograss, mat muhly, cholla cactus, plains pricklypear cactus and oneseed juniper. As the ecological condition deteriorates, it is accompanied by a sharp decrease in the plant cover. When adequate plant cover is lacking, this site is subject to severe sheet and gully erosion due to the very slow water intake rate. A system of deferred grazing, which varies the time of grazing and rest in a pasture during successive years, is needed to maintain or improve the plant community. Rest during April, May and June allows western wheatgrass to grow and reproduce. Rest during the summer is beneficial to warm-season plants such as blue grama, alkali sacaton, vine-mesquite and sideoats grama. Spring rest will also alkali sacaton sufficient time to green up before being grazed heavily.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.5 – 3.0
75 – 51	2.9 – 4.6
50 – 26	4.5 – 9.0
25 – 0	9.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	P	P	P	P	P	P	D	D	D	D

Animal Kind: Livestock
Animal Type: Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	D	D	D	D	P	P	P	P	P	D	D	D

Animal Kind: Wildlife
Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Globemallow	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	D	D	D	D	D	D	D	D	D	P

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Colfax, Mora**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Colfax, Mora, San Miguel, Union.

Characteristic Soils Are:	
Mion	
Other Soils included are:	

Site Description Approval:

Author	**Date**	**Approval**	**Date**
Don Sylvester	04/25/80	Durwood E. Ball	04/29/80

Site Description Revision:

Author	**Date**	**Approval**	**Date**
Elizabeth Wright	08/28/02	George Chavez	12/17/02